

California Monthly Climate Summary February 2007

Weather Highlights

February 2007 began where January left off with continued dry weather over the entire state and Santa Ana winds blowing in Southern California. February 5 was warm enough for 29 potential new daily high temperature readings across the state with downtown Los Angeles breaking its 53-year-old record daily high of 84°F by 5°F. For the National Weather Service Co-Operative Network, the statewide average mean temperature was 48.6°F which is 0.1 degrees higher than the long-term average. The statewide average maximum temperature was 58.9°F, which is 0.6°F less than the long-term average. The statewide average minimum temperature was 38.3°F which is 0.8°F greater than the long-term average. After enduring a 33-day dry spell, the rains finally returned to Northern California during the second week of February when a strong low pressure system spread rain from the northwest corner of the state down to Fresno. Several inches of rain fell and snow was plentiful above 6000 feet. On February 10th, Redding set a new daily precipitation record with 2.36 inches breaking the old record of 2.35 inches set in 1925.

High pressure built over the state again during the third week of the month with February 17 having 21 preliminary daily high temperature records and 3 high daily low temperatures. Downtown Los Angeles tied an 1890 record at 89°F. Rain made it to the south part of the state by February 19, when Brown Field set a new daily precipitation record with 1.56 inches. The old record was 0.6 inches and was set in 1958. February ended with more storms hitting the north part of the state bringing plenty of rain and snow to the region. On February 22, Eureka set a new daily precipitation record of 2.32 inches breaking the old record of 2.05 inches set in 1948. On February 27th, Sacramento Executive Airport set a new daily precipitation record with 0.77 inches breaking the old record of 0.63 inches set in 1957. The storms at the end of the month were cold storms evidenced by snow falling in Ukiah as well as at elevations below 2000 feet east of Sacramento.

Preliminary records reported on the National Weather Service Record Event Report show that there were 66 temperature records tied or broken statewide for the month – far fewer than the number of January records. There were only 11 days in February with a record set somewhere in California. It should be noted that this data is preliminary and may not include all records set. New daily maximum temperature records account for 60 of the 66 reports. Fifty of the 60 reports were recorded on 2 days, February 5th and February 17th. In addition, 3 new high minimum temperature records were set on February 17th. Statewide extremes from the California Data Exchange Center's (CDEC) network of temperature gages are shown below.

Precipitation in February was much more plentiful than January. The largest amount of precipitation recorded for February 2007 was at Brush Creek where 25.21 inches of rain fell. This is 215% of the average February rainfall at this site. Two stations in the state reported no precipitation for the month – Imperial Valley and Palm Springs. The 8-Station Index for northern California precipitation showed 6 days of precipitation for a total of 13.3 inches. This is 165% of the long-term average for February. The south part of the state was dry with the downtown Los Angeles station recording its driest July through February total in the station's history with only 2.42 inches of rain. The long

term average for this time period is 11.67 inches of precipitation. The Long Beach and Burbank Airport stations are also recording their driest year-to-date on record and Santa Barbara is recording its third driest. The statewide average precipitation for February was 126% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document. The National Weather Service Cooperative Network showed a statewide average precipitation of 3.59 inches which is 0.24 inches below the long-term average.

The continuing dry weather in southern California has been reflected in the Drought Monitor Maps which can be found on the National Drought Mitigation Center's (NDMC) website <http://drought.unl.edu/dm/>. The north central and northwest part of the state are depicted as not having dry conditions. Most of the rest of California is depicted as having abnormally dry (D0) or moderate drought conditions (D1). The southern parts of the state are depicted by the NDMC as being in either severe drought (D2) or extreme drought (D3). Maps are updated weekly.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as a neutral pattern. Equatorial sea surface temperature anomalies for the eastern tropical Pacific are running near -0.5 degrees Celsius. Trends are continuing downward with La Nina conditions possible in the next couple of months. More information on the topic can be found at the Climate Prediction Center's web site:

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/. ENSO conditions along with current trends indicate a warmer than average March through May period for most of California and an equal chance of above, near, or below-normal temperatures for coastal California. Precipitation forecasts show below normal totals for the next three months for the southern third of the state and equal chance of above, near, or below normal precipitation for the rest of the state. Long-range outlook plots of precipitation and temperature can be found at: <http://www.wrcc.dri.edu/longrang/>. General weather information of interest can be found at <http://www.noaawatch.gov/>. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

February's rains and warmer weather improved agricultural conditions in the state. Losses from January's freeze are continuing to be assessed as damaged fruit and branches are removed from orchards and damaged field crops are plowed under. Irrigation was needed in the southern part of the state due to continued lack of precipitation. Almond orchards have begun their bloom as have some stone fruits in the San Joaquin Valley. Land preparations are underway for field crops and weed and pest control activities are in progress. For further crop information, please see <http://www.nass.usda.gov/index.asp>

Snow Data

The snow water equivalent at the beginning of March is running at 62% of normal statewide with an average of 19.1 inches in the north, 17.4 inches in the central, and 12.8 inches in the south parts of the Sierra. These values are approximately 58% of the average April 1 values.

The following snow product for the climate summary is provided by the University of California, Merced, University of California, Santa Barbara, and the National Snow and Ice Data Center under NASA Grant NNG04GC52 (REASoN CAN 'Multi-resolution snow products for the hydrologic sciences'). For further information or comments/suggestions please contact Robert Rice (rrice@ucmerced.edu or (209)228-4397) or Roger Bales at University of California, Merced. A more detailed product is available on the state climatologist web site under the climate data and information link under the heading monthly SCA report.

The analysis of Snow Covered Area (SCA) is derived from MODIS (Moderate Resolution Imaging Spectroradiometer) aboard NASA's Terra and Aquas satellites. Data from MODIS are processed to provide a resolution of 500 meters and a fractional SCA product where each pixel can range in value between 0 and 100% (e.g. 50%=50% of the 500 meter pixel is covered by snow) as opposed to the operational binary product that defines a pixel as either snow or snow free. The MODIS SCA product is available on a daily basis, but viewable areas are subject to cloud cover. In addition, tree canopies mask a portion of the SCA and should be viewed accordingly based on the vegetation characteristics of each hydrologic unit and watershed.

This analysis covers the Sierra Nevada and various river basins, with Figure 1 highlighting the SCA over the Sierra Nevada for February 2007 compared to 2005. Figure 2 shows the percent change in SCA from the end of January to the end of February 2007. It should be noted that due to extensive cloud cover the last week of February, SCA amounts for February are likely underestimated. As can be seen from Figures 1 and 2, February 2007 improved the state of the snowpack for California for the most part. The snow in 2007 is still lacking and is much less than 2005. Year-to-year comparative analyses of this product will be used until sufficient data exists to prepare a suitable climatology for comparison.

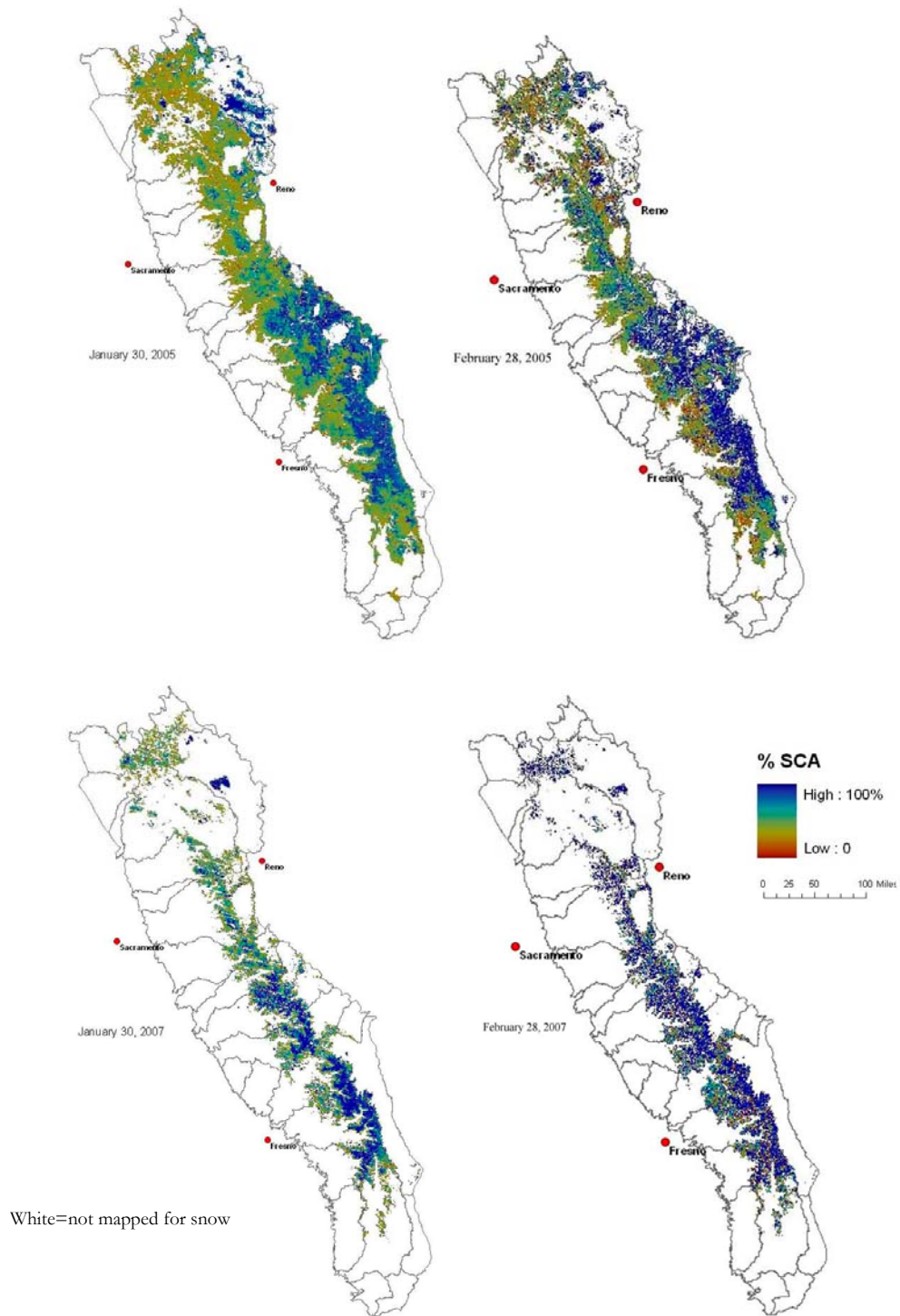


Figure 1. SCA over the Sierra Nevada on January 30 and February 28, 2005 and January 30 and February 28, 2007 outlined by the individual watersheds. Evident is the extent of snow cover between January and February of 2005 and 2007 in which the statewide snow water equivalent (SWE) on March 1, 2007 was 68% of the historical March 1 average (based on snow course date), while the March 1, 2005 was 135% of the March 1 average.

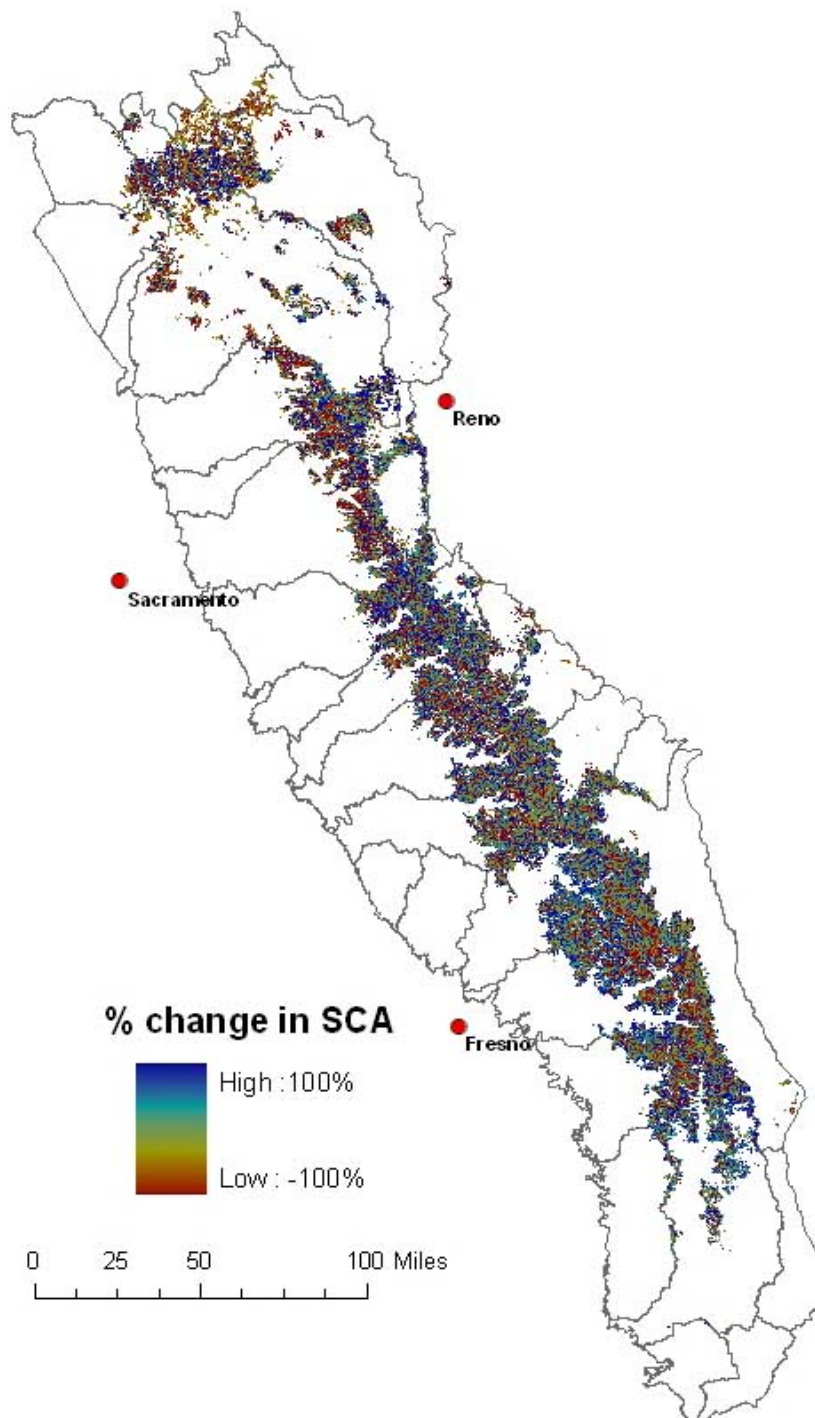


Figure 2. The graphic shows the change in SCA between January 30 and February 28 2007 in which 100% represents an increase in SCA and -100% represents a decline in SCA across a 500meter pixel.

Other Climate Summaries

Western Region Climate Center has launched a new page for tracking California's climate. It is called California Climate Tracker. It contains statewide precipitation and temperature anomaly data as well as regional data.

[California Climate Tracker](#) (new product of Western Region Climate Center)
[Golden Gate Weather Service Climate Summary](#)
[NOAA Monthly State of the Climate Report](#)

Statewide Extremes

High Temperature – 92 deg F (Beverly Hills, South Coast)

Low Temperature - -12 deg F (Tuolumne Meadows, San Joaquin)

High Precipitation – 25.2 inches (Brush Creek, Sacramento)

Low Precipitation –0 inches (Palm Springs and Imperial Valley, Colorado River Desert)

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basins Reporting			Stations Reporting			Percent of Historic Average	
		Basins	Feb	Oct-Feb	Stations	Feb	Oct-Feb	Feb	Oct-Feb
NORTH COAST	0.27	5	5	5	19	14	13	157%	88%
SAN FRANCISCO BAY	0.03	2	2	2	6	5	4	155%	86%
CENTRAL COAST	0.06	3	3	3	11	7	6	94%	58%
SOUTH COAST	0.06	3	3	3	15	12	10	50%	33%
SACRAMENTO RIVER	0.26	5	5	5	43	29	28	150%	75%
SAN JOAQUIN RIVER	0.12	6	6	6	25	24	22	137%	73%
TULARE LAKE	0.07	5	5	5	28	27	27	103%	58%
NORTH LAHONTAN	0.04	3	3	3	14	9	9	154%	65%
SOUTH LAHONTAN	0.06	3	3	3	15	11	10	28%	35%
COLORADO RIVER	0.03	1	1	1	6	3	3	6%	5%
STATEWIDE WEIGHTED AVERAGE	1.00	36	36	36	182	141	132	126%	69%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	32	26.9	42.2	65.8
SF Bay	21	35.8	48.3	65.3
Central Coast	35	37.8	50.3	68.5
South Coast	69	34.4	52.1	78.1
Sacramento	92	24.7	41.8	67.2
San Joaquin	76	24.4	42.1	64.9
Tulare Lake	19	10.6	34.4	64.3
North Lahontan	27	10.9	31.7	55.1
South Lahontan	24	16.8	33.6	62.2
Colorado River	22	40.5	57.8	75.8
Statewide Weighted Average	417	25.4	42.3	66.5